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EXAMINER

KOPEC, MARK T

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Please find below and/or attached an Office communication concerning this application or proceeding.

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 08/479,810
Filing Date: June 07, 1995
Appellant(s): BEDNORZ ET AL.

Dr. Daniel P. Morris
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 05/15/08 appealing from the Office action mailed 10/20/05.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal. Note Appellant's remarks regarding copending (suspended) S.N. 303,561.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

Note Appellant's statement regarding multiple dependent claims 323, 326, 327, 328, 334, 337, 338, 348, 353, 354, 355, 356, 357, 422, 424, 426, 427 and 495. These multiple dependent claims have been listed as "Rejected" as dependent upon rejected base claims. However, as indicated by Appellant, these multiple dependent claims also depend from base claims indicated as allowed.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

The Examiner notes the following two after-final amendment/remarks were not addressed in the "Status of Amendments" (accompanying the Notice of Non-Compliant Appeal Brief mailed 11/15/07). The status of the amendment(s) is as follows:

16th Supplementary Response (filed 01/31/08) is **ENTERED**. No claim amendments accompany this response. As stated by Appellant in the remarks, the attachment (Cryrogenic Engineering) is to provide background information to the Board of Appeals and no remarks from the Examiner are necessary.

17th Supplementary Response (filed 03/20/08) is **ENTERED**. No claim amendments accompany this response. As stated by Appellant in the remarks, the attachment (Wikipedia) is to provide background information to the Board of Appeals and no remarks from the Examiner are necessary.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief (pages 18-37 of Vol 1) is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

Appellant's claim for priority under 35 U.S.C. 119 in this section of the Brief is noted. As stated by Appellant, no prior art rejection(s) are pending, and the priority date of the foreign application is not required to overcome any prior art rejection.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

Schuller et al, "A Snapshot View of High-Temperature Superconductivity 2002", Workshop on High Temperature Superconductivity April 5-8, 2002 pp 1-50.

"Exploring Superconductivity",
www.nobelchannel.com/learningstudio/introduction, no pub date.

Copies of these articles were provided to applicant (PTO-892) accompanying the Final Rejection mailed 10/20/05.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-64, 66-72, 84, 85, 88-96, 100-102, 109-112, 115-122, 126-134, 139, 141-143, 146-149, 153-155, 162-166, 182-184, 187, 188, 192-195, 198-212, 217-219, 222, 223, 227-230, 232-234, 237-240, 244-246, 253-257, 268, 273-275, 278, 279, 283-286, 289-295, 302, 303, 308-310, 313, 314, 318-329, 331-334, 337-345, 347-357, 359-374, 376, 382, 383, 389, 394, 395, 402, 407, 408, 414-419, 421-424, 426-501, 508-510, and 516-543 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for compositions comprising a transition metal oxide containing at least a) an alkaline earth element or Group IIA element and b) a rare-earth element or Group IIIB element, does not reasonably provide enablement for the invention as claimed. The specification does not enable any person skilled in the art to which it pertains, or with which it

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is most nearly connected, to make the invention commensurate in scope with these claims.

The present specification is deemed to be enabled only for compositions comprising a transition metal oxide containing at least a) an alkaline earth element and b) a rare-earth element or Group IIIB element. The art of high temperature (above 30/K) superconductors is an extremely unpredictable one. Small changes in composition can result in dramatic changes in or loss of superconducting properties. The amount and type of examples necessary to support broad claims increases as the predictability of the art decreases.¹ Claims broad enough to cover a large number of compositions that do not exhibit the desired properties fail to satisfy the requirements of 35 U.S.C. 112.² Merely reciting a desired result does not overcome this failure.³ In particular, the question arises: Will any layered perovskite material exhibit superconductivity?

It should be noted that at the time the invention was made, the theoretical mechanism of superconductivity in these

¹See In re Fisher, 166 USPQ 18, 24; and In re Angstadt and Griffen, 190 USPQ 214, 218. See also, In re Colianni, 195 USPQ 150, 153, 154 (CCPA 1977) (J. Rich).

²See In re Cook, 169 USPQ 298, 302; and Cosden Oil v. American Hoechst, 214 USPQ 244, 262.

³See In re Corkill, 226 USPQ 105, 1009.

materials was not well understood. That mechanism still is not understood. Accordingly, there appears to be little factual or theoretical basis for extending the scope of the claims much beyond the proportions and materials actually demonstrated to exhibit high temperature superconductivity. A "patent is not a hunting license. It is not a reward for the search, but a reward for its successful conclusion".⁴

Upon careful consideration of the evidence as a whole, including the specification teachings and examples, and applicants affidavits and remarks, the examiner has determined that the instant specification is enabled for compositions comprising a transition metal oxide containing an alkaline earth element and a rare-earth or Group IIIB element (as opposed to only compositions comprising $Ba_xLa_{5-x}Cu_5O_y$, as stated in the Final Office action). Applicant has provided guidance throughout the instant specification that various transition metal oxides (such as copper oxide) containing an alkaline earth element and a rare-earth or Group IIIB element result in superconductive compounds which may in turn be utilized in the instantly claimed apparatus.

⁴See Brenner v. Manson, 383 US 519, 148 USPQ 689.

(10) Response to Argument

Appellant's remarks have been carefully considered. The following remarks are believed to address each of the issues raised by Appellant.

Appellants' arguments, as well as the Affidavits filed 5/1/98, 5/14/98, 12/16/98 and 3/3/04 (1.132 Declarations of Mitzi, Tsuei, Dinger and Shaw) (Advisory mailed 2/25/99 (Paper 77E)) have been fully considered but they are not deemed to be persuasive.

The additional case law and arguments by the applicants have been duly noted. For the reasons that follow, however, the record as a whole is deemed to support the initial determination that the originally filed disclosure would not have enabled one skilled in the art to make and use the invention to the scope that it is presently claimed.

Appellants argue that their disclosure refers to "the composition represented by the formula RE-TM-O, where RE is a rare earth or rare earth-like element, TM is a nonmagnetic transition metal, and O is oxygen", and list several species such as " $\text{La}_{2-x}\text{Ba}_x\text{CuO}_{4-y}$ " which they indicate are found in the present disclosure.

Notwithstanding that argument, it still does not follow that the invention is fully enabled for the **scope** presently claimed. The claims include formulae which are much broader than the RE-TM-O formula cited in the disclosure. Claim 24 recites "a transition metal oxide", claim 88 "a composition", and claim 96 "a copper-oxide compound".

The present specification actually shows that known forms of "a transition metal oxide", "a composition", and "a copper-oxide compound" do **not** show the onset of superconductivity at above 26/K. At p. 3, line 20, through p. 4, line 9, of their disclosure, the applicants state that the prior art includes a "Li-Ti-O system with superconducting onsets as high as 13.7/K." Official Notice is taken of the well-known fact that Ti is a transition metal. That disclosure also refers to "a second, non-conducting CuO phase" at p. 14, line 18. Accordingly, the present disclosure is not deemed to have been fully enabling with respect to the "transition metal oxide" of claim 24, the "composition" of claim 88, or the "copper-oxide compound" of claim 96.

The availability requirement of enablement must also be considered in light of the scope or breadth of the claim limitations. The Board of Appeals considered this issue in an

application which claimed a fermentative method using microorganisms belonging to a species. Appellants had identified three novel individual strains of microorganisms that were related in such a way as to establish a new species of microorganism, a species being a broader classification than a strain. The three specific strains had been appropriately deposited. The issue focused on whether the specification enabled one skilled in the art to make any member of the species other than the three strains which had been deposited. The Board concluded that the verbal description of the species was inadequate to allow a skilled artisan to make any and all members of the claimed species. *Ex parte Jackson*, 217 USPQ 804, 806 (Bd. App. 1982).

In *Enzo Biochem, Inc. v. Calgene, Inc.*, 188 F.3d 1362, 52 USPQ2d 1129 (Fed. Cir. 1999), the court held that claims in two patents directed to genetic antisense technology (which aims to control gene expression in a particular organism), were invalid because the breadth of enablement was not commensurate in scope with the claims. Both specifications disclosed applying antisense technology in regulating three genes in *E. coli*. Despite the limited disclosures, the specifications asserted that the "[t]he practices of this invention are generally applicable with respect to any organism containing genetic

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material which is capable of being expressed ... such as bacteria, yeast, and other cellular organisms." The claims of the patents encompassed application of antisense methodology in a broad range of organisms. Ultimately, the court relied on the fact that (1) the amount of direction presented and the number of working examples provided in the specification were very narrow compared to the wide breadth of the claims at issue, (2) antisense gene technology was highly unpredictable, and (3) the amount of experimentation required to adapt the practice of creating antisense DNA from E. coli to other types of cells was quite high, especially in light of the record, which included notable examples of the inventor's own failures to control the expression of other genes in E. coli and other types of cells.

The examples at p. 18, lines 1-20, of the present specification further substantiates the finding that the invention is not fully enabled for the scope presently claimed.

With a 1:1 ratio of (Ba, La) to Cu and an x value of 0.02, the La-Ba-Cu-O form (i.e., "RE-AE-TM-O", per p. 8, line 11) shows "no superconductivity". With a 2:1 ratio of (Ba, La) to Cu and an x value of 0.15, the La-Ba-Cu-O form shows an onset of superconductivity at " $T_c = 26/K$ ". It should be noted, however, that **all** of the claims in this application require the critical

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temperature (T_c) to be "in excess of 26/K" or "greater than 26/K".

The state of the prior art provides evidence for the degree of predictability in the art and is related to the amount of direction or guidance needed in the specification as filed to meet the enablement requirement. The state of the prior art is also related to the need for working examples in the specification. The state of the art for a given technology is not static in time. It is entirely possible that a disclosure filed on January 2, 1990, would not have been enabled. However, if the same disclosure had been filed on January 2, 1996, it might have enabled the claims. Therefore, the state of the prior art must be evaluated for each application based on its filing date. 35 U.S.C. 112 requires the specification to be enabling only to a person "skilled in the art to which it pertains, or with which it is most nearly connected."

The appellants also have submitted three affidavits attesting to the applicants' status as the discoverers of materials that superconduct $> 26/K$. Each of the affidavits further states that "all the high temperature superconductors which have been developed based on the work of Bednorz and Muller behave in a similar manner (way)". Each of the

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affidavits add "(t)hat once a person of skill in the art knows of a specific transition metal oxide composition which is superconducting above 26/K, such a person of skill in the art, using the techniques described in the (present) application, which includes all known principles of ceramic fabrication, can make the transition metal oxide compositions encompassed by (the present) claims ...without undue experimentation or without requiring ingenuity beyond that expected of a person of skill in the art." All three affiants apparently are the employees of the assignee of the present application.

Those affidavits do not set forth particular facts to support the conclusions that all superconductors based on the applicants' work behave in the same way and that one skilled in the art can make those superconductors without undue experimentation. Conclusory statements in an affidavit or specification do not provide the factual evidence needed for patentability.⁵

⁵See In re Lindner, 173 USPQ 356, 358 (CCPA 1972).

Those affidavits do not overcome the non-enablement rejection. The present specification discloses *on its face* that only certain oxide compositions of rare earth, alkaline earth, and transition metals made according to certain steps will superconduct at $> 26/K$.

Those affidavits are not deemed to shed light on the state of the art and enablement *at the time* the invention was made. One may **know now of a material** that superconducts at more than $26/K$, but the affidavits do not establish the existence of that knowledge on the filing date for the present application. Even if the present application "includes all known principles of ceramic fabrication", those affidavits do not establish the level of skill in the ceramic art as of the filing date of that application.

It is fully understood that the applicants are the pioneers in high temperature metal oxide superconductivity. The finding remains, nonetheless, that the disclosure is not fully enabling for the scope of the present claims.

The applicants quote a statement from part of the previous Office Action and assert that the Examiner does not support this statement with any case law citations. That assertion is

incorrect. Seven decisions have been cited as providing the legal basis for this determination of non-enablement.⁶

The appellants argue that their own examples do not support the determination of non-enabling scope of the invention. Nevertheless, the record is viewed as a whole. If the applicants could not show superconductivity with a $T_c > 26/K$ for certain compositions falling within the scope of the present claims, it is unclear how someone else skilled in the art would have been enabled to do so at the time the invention was made.

The appellants assert that (b)y the examiner's statement that these (statements in the affidavits) are conlusionary (sic) the Examiner appears to be placing himself up as an expert in the field of superconductivity and request that the Examiner submit an affidavit in the present application rebutting the position taken by applicants 3 affiants. Notwithstanding those assertions, this Examiner has determined that those affidavits were insufficient because they were conclusory only, i.e., they lacked particular facts to support the conclusions reached.

The appellants argue that the Examiner has provided no substantial evidence to support this assertion (of non-enabling

⁶See footnotes 1-4 in the April 15, 1996 Office Action, paper no. 54. See also, the corresponding sections of this Office Action.

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scope of the invention). It is respectfully requested that the Examiner support (his) assertion with factual evidence and not unsupported statements. Nevertheless, the determination of non-enabling scope is maintained for the reasons of record.

The applicants argue that the standard of enablement for an apparatus is not the same as the standard of enablement for a composition of matter and that their claimed invention is enabling because it is directed to a method of use rather than a composition. Basis is not seen for that argument, to the extent that it is understood. It is noted that 35 U.S.C. 112, first paragraph, reads as follows:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention. Apparatus claims also would be subject to the statutory provisions of 35 U.S.C. 112, first paragraph.

The appellants assert that the Examiner has not shown by evidence not contained within applicants' teaching that the art of high T_c superconductors is unpredictable in view of applicants

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teaching (spelling and punctuation errors corrected). To the extent that the same assertion is understood, the rejection is maintained for the reasons of record.

The applicants point to Copper Oxide Superconductors² by Charles P. Poole, Jr., et al., (hereinafter, the Poole article) as supporting their position that higher temperature superconductors were not that difficult to make after their original discovery.

Initially, however, it should be noted that the Poole article was published *after* the priority date presently claimed. As such, it does not provide evidence of the state of the art *at the time* the presently claimed invention was made.

Finally, the Preface states in part at A3: The unprecedented worldwide effort in superconductivity research that has taken place over the past two years has produced an enormous amount of experimental data on the properties of the copper oxide type materials that exhibit superconductivity above the temperature of liquid nitrogen. ... During this period a consistent experimental description of many of the properties of the principal superconducting compounds such as BiSrCaCuO, LaSrCuO, TlBaCaCuO, and YBaCuO has emerged. ... The field of high-temperature superconductivity is still evolving ...≅ That preface is deemed to show that the field of high-temperature superconductivity continued to grow, on the basis of on-going basic research, *after* the Bednorz and Meuller article was published.

Appellants have submitted three affidavits attesting to the applicants' status as the discoverers of materials that superconduct $> 26/K$. Each of the affidavits states that "all the high temperature superconductors which have been developed based on the work of Bednorz and Muller behave in a similar manner (way)". Each of the affidavits add "(t)hat once a person of skill in the art knows of a specific transition metal oxide composition which is superconducting above 26/K, such a person of skill in the art, using the techniques described in the

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(present) application, which includes all known principles of ceramic fabrication, can make the transition metal oxide compositions encompassed by (the present) claims ...without undue experimentation or without requiring ingenuity beyond that expected of a person of skill in the art.

It is the examiner's maintained position that while general principles of ceramic fabrication were most certainly known prior to the filing date of the instant application, the utilization of such techniques to produce superconductive materials within the scope of the instant claims were not known. The affidavits are not effective to demonstrate enablement *at the time* the invention was made. As stated in paper #66, page 8, one may now know of a material that superconducts at more than 26K, but the affidavits do not establish the existence of that knowledge on the filing date of the present application.

A key issue that can arise when determining whether the specification is enabling is whether the starting materials or apparatus necessary to make the invention are available. In the biotechnical area, this is often true when the product or process requires a particular strain of microorganism and when the microorganism is available only after extensive screening. The Court in *In re Ghiron*, 442 F.2d 985, 991, 169 USPQ 723, 727 (CCPA 1971), made clear that if the practice of a method

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requires a particular apparatus, the application must provide a sufficient disclosure of the apparatus if the apparatus is not readily available. The same can be said if certain chemicals are required to make a compound or practice a chemical process. In re Howarth, 654 F.2d 103, 105, 210 USPQ 689, 691 (CCPA 1981).

In arguing the instant enablement rejection, applicant contends that the examiner has not provided any factual evidence that the art of high temperature superconductivity is an extremely unpredictable one. Applicant's statements include:

Applicants request that the Examiner provide an Examiner's affidavit showing that the Examiner has expertise to make such a statement not supported by documented factual evidence (Response filed 1/31/05, page 119).

The examiner should withdraw the rejection, provide factual evidence to support the opinion or submit an examiner's affidavit under MPEP 706.02(a) qualifying himself as an expert in the art of high Tc superconductivity to offer such a conclusory opinion (Response filed 1/31/05, page 121).

The examiner has provided no evidence to support the statement 'that at the time the invention was made, the theoretical mechanism of superconductivity in these materials was not well understood. This mechanism is still not understood'. Applicant's request the Examiner to introduce evidence to support this statement or to place an examiner's affidavit under MPEP 706.02(a) qualifying himself as an expert to make this statement (Response filed 1/31/05, page 136).

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Listed in Section (8) of this Answer are articles relating to experimental and theoretical work on superconductivity.

Schuller et al "A Snapshot View of High Temperature Superconductivity 2002" (report from workshop on High Temperature Superconductivity held April 5-8, 2002 in San Diego) discusses both the practical applications and theoretical mechanisms relating to superconductivity. At page 4, the reference states:

Basic research in high temperature superconductivity, because the complexity of the materials, brings together expertise from materials scientists, physicists and chemists, experimentalists and theorists... It is important to realize that this field is based on complex materials and because of this materials science issues are crucial. Microstructures, crystallinity, phase variations, nonequilibrium phases, and overall structural issues play a crucial role and can strongly affect the physical properties of the materials. Moreover, it seems that to date there are no clear-cut directions for searches for new superconducting phases, as shown by the serendipitous discovery of superconductivity in MgB_2 . Thus studies in which the nature of chemical bonding and how this arises in existing superconductors may prove to be fruitful. Of course, "enlightened" empirical searches either guided by chemical and materials intuition or systematic searches using well-defined strategies may prove to be fruitful. It is interesting to note that while empirical searches in the oxides, gave rise to many superconducting systems, similar (probable?) searches after the discovery of superconductivity in MgB_2 have not uncovered any new superconductors.

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At pages 5-6, the reference states:

The theory of high temperature superconductivity has proven to be elusive to date. This is probably as much caused by the fact that in these complex materials it is very hard to establish uniquely even the experimental phenomenology, as well as by the evolution of many competing models, which seem to address only particular aspects of the problem. The Indian story of the blind men trying to characterize the main properties of an elephant by touching various parts of its body seems to be particularly relevant. It is not even clear whether there is a single theory of superconductivity or whether various mechanisms are possible. Thus it is impossible to summarize, or even give a complete general overview of all theories of superconductivity and because of this, this report will be very limited in its theoretical scope.

At page 7, the reference states:

Thus far, the existence of a totally new superconductor has proven impossible to predict from first principles. Therefore their discovery has been based largely on empirical approaches, intuition, and even serendipity. This unpredictability is at the root of the excitement that the condensed matter community displays at the discovery of a new material that is superconducting at high temperature.

In a published article entitled "Exploring Superconductivity" published at

(<http://www.nobelchannel.com/learningstudio/introduction>),

states:

It is worth noting that there is no accepted theory to explain the high-temperature behavior of this type of compound. The BCS theory, which has proven to be a useful tool in understanding lower-temperature materials, does not adequately explain how the Cooper pairs in the new compounds hold together at such high

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temperatures. When Bednorz was asked how high-temperature superconductivity works, he replied, "If I could tell you, many of the theorists working on the problem would be very surprised."

It is clear from these articles, published well after the filing date of the instant application, that the art is still considered complex and unpredictable, and that no single theory for the mechanism responsible for superconductivity has been generally accepted.

Applicant has taken the position that the instant "apparatus" claims do not require the instant specification be fully enabled for the claimed superconductive compositions. At page 157 of the response filed 1/31/05, applicant states "Notwithstanding, since the claims are apparatus and device claims, Applicants do not believe that they are required to provide a teaching of how to fabricate all compositions which may be used within the full scope of Applicant's claimed invention". The examiner respectfully disagrees. The examiner respectfully maintains that the instant claims must be enabled for all aspects of the claimed invention, including compositions utilized therein. Such is the basis of applicant's invention. The examiner does not deny that the instant application includes "all know principles of ceramic science", or that once a person of skill in the art knows of a specific type of composition

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which is superconducting at greater than or equal to 26K, such a person of skill in the art, using the techniques described in the application, which included all principles of ceramic fabrication known at the time the application was initially filed, can make the known superconductive compositions. The numerous 1.132 declarations, such as those of Mitzi, Shaw, Dinger and Duncombe, and the Rao article, are directed to production of known superconductive materials. What is not a "matter of routine experimentation" in this complex, unpredictable art is arriving at superconductive compositions outside the scope of the allowable claims (e.g., subsequently discovered BSCCO or Tl-systems as disclosed in Rao (see response filed 3/8/05, pages 141-143)). The examiner respectfully maintains that the instant disclosure has not provided sufficient guidance to produce such materials. At page 125 of the response filed 1/31/05, applicant argues In re Fisher (166 USPQ 18) emphasizing "It is apparent that such an inventor should be allowed to dominate the future patentable inventions of others where those inventions were based in some way on his teachings". The examiner respectfully submits the remaining statements of Fisher are equally important:

It is equally apparent, however, that he must not be committed to achieve this dominance by claims which are insufficiently supported and hence, not in

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compliance with the first paragraph of 35 USC 112. That paragraph requires the scope of the claims must bear a reasonable correlation to the scope of enablement provided by the specification to persons of ordinary skill in the art... In cases involving unpredictable factors such as most chemical reactions... the scope of enablement obviously varies inversely with the degree of unpredictability of the factors involved...

While applicant argues "domination", the issue of "reasonable correlation to the scope of enablement" is as important. At several instances the remarks, applicant has stated "In the present invention Applicants have provided a teaching (and proof thereof) of how to make all known high Tc materials useful to practice their claimed invention" (reply filed 1/31/05, page 152). The examiner respectfully disagrees. Applicant has provided an enabled disclosure for superconductive compositions containing a transition metal oxide containing at least a) an alkaline earth element and b) a rare-earth element of Group IIIB element (pages 5-8 of Rejection mailed 2/28/04). The fact that other subsequently discovered superconductive systems (such as BSCCO) may be made by "general principles of ceramic science" does not provide enablement for the claimed invention. The state of the art for a given technology is not static in time. The state of the art must be evaluated based on the application filing date. Whether the specification would have been enabling as of the filing date involves consideration

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of the nature of the invention, the state of the prior art, and the level of skill in the art. The initial inquiry is into the nature of the invention, i.e., the subject matter to which the claimed invention pertains. The nature of the invention becomes the backdrop to determine the state of the art and the level of skill possessed by one skilled in the art. The state of the prior art is what one skilled in the art would have known, at the time the application was filed, about the subject matter to which the claimed invention pertains. A conclusion of lack of enablement means that, based on the evidence regarding each of the factors discussed in the rejection, the specification, at the time the application was filed, would not have taught one skilled in the art how to make and/or use the full scope of the claimed invention without undue experimentation. In re Wright, 999 F.2d 1557,1562, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993).

In discussing the Rao article at page 169 of the response filed 1/31/05, applicant states:

It thus is clear that broader claims than allowed should be allowed since it is clear that the allowed claims can be avoided following applicant's teaching without undue experimentation. Applicants are entitled to claims which encompass these materials since they were made following Applicants' teaching.

The examiner does not dispute that Rao acknowledges that applicant initiated the study of high temperature

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superconductivity, or that a large number of oxides are prepared by the general principles of ceramic science. However, the examiner maintains that such superconductive compounds cannot be made by following applicants teaching without undue experimentation. These are materials subsequently discovered by others. Applicant are entitled to claims, apparatus or otherwise, which are fully enabled by the instant specification at the time of filing. For the reasons clearly set forth in the rejection, after carefully reviewing the instant disclosure including all examples and statements included therein, the examiner respectfully maintains that the instant claims are enabled for superconductive compositions containing a transition metal oxide containing at least a) an alkaline earth element and b) a rare-earth element of Group IIIB element (pages 5-8 of Rejection mailed 2/28/04).

Additionally, applicant's remarks regarding the Asahi Shinbum article are noted (pages 178-180 of the remarks filed 1/31/05). Applicant contends "Since Applicant's original article is the only information enabling the Asahi Shinbum article, it logically follows that the Examiner necessarily concludes that all Applicant's claims are fully enabled". The examiner respectfully disagrees. A careful review of the article discloses "an oxide compound of La and Cu with Barium

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which has a structure of the so-called perovskites". No specific stoichiometry is proposed. Even if this disclosure were available as a prior publication, the examiner contends that the article may not be applied as operable prior art. The disclosure in an assertedly anticipating reference must provide an enabling disclosure of the desired subject matter; mere naming or description of the subject matter is insufficient, if it cannot be produced without undue experimentation. *Elan Pharm., Inc. v. Mayo Foundation for Medical and Education Research*, 346 F.3d 1051, 1054, 68 USPQ2d 1373, 1376 (Fed. Cir. 2003).

The examiner respectfully maintains, for the reasons of record, that the disclosure is not fully enabling for the scope of the present claims.

In view of the foregoing, the above claims have failed to patentably distinguish over the applied art.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

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Respectfully submitted,

/Mark Kopec/
Primary Examiner TC 1700

Conferees:

/Harold Y Pyon/

Supervisory Patent Examiner, Art Unit 1796

/Gregory L Mills/

Supervisory Patent Examiner, Art Unit 1700